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Getting Started with ArcMap: Relating Attributes from Tables

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Getting Started with ArcMap: Relating Attributes from Tables

Welcome to the Essential ArcGIS Task Sheet Series. This series supplements the Iowa State University GIS Geospatial Technology Training Program short course series, "Essential ArcGIS Tutorial Series." The task sheets are designed to provide quick, easy instructions for performing specific tasks in GIS.

Relate defines relationships between two tables of different features. this allows a layer's attributes to be accessed using the associated attributes of another table. This task sheet will cover how to relate attributes from tables.

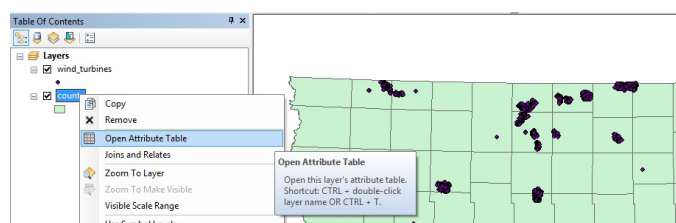
1. Download Data

- Download the data used in this task sheet by navigating to www.extension.iastate.edu/communities/gis/quicktasksheets/data. Click on the publication number that matches this task sheet. In this case, the publication number is **PM2082-09x**. This data originated from the Iowa Natural Resource Geographic Information Systems Library (NRGIS Library) under **State-wide Data > Infrastructure > wind_turbines** and can also be found at: <https://programs.iowadnr.gov/nrgislibx/> or www.igsb.uiowa.edu/nrgislibx/.

- Add the **county** and **wind_turbines** shapefiles to a blank ArcMap Document.

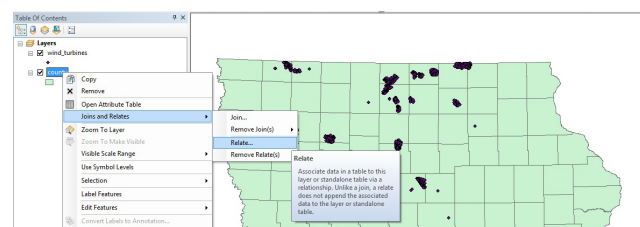
2. Relating Features

- Open the attribute table from both the **wind_turbines** layer and the **county** layer by right-clicking the layer from the **Table of Contents** and selecting **Open Attribute Table**. The attribute table of each layer can be opened simultaneously.
- Examine the contents of each table to find a unique field that the tables can be matched based on. In this case the **CO_NUMBER** field contains numbers that represent each county. *Note: Using the COUNTY field will not work because all caps is used by the wind_turbines layer and not the county layer.*
- Right-click on the **county** layer and select **Joins and Relates > Relate...**
- From the **Choose the field in this layer that the relate will be based on:** drop-down menu, select **CO_NUMBER**.
- From the **Choose the table or layer to relate to this layer, or load from disk:** drop-down menu, select



FID	Shape	CO_NUMBER	COUNTY	TRIS_S_L	UTM_X	UTM_Y	Loc_id
0	Point	15	BUENA VISTA	NE SE NW, Sec. 21, T20N, R30W	308505.1	4730333.43	41
1	Point	2	BUENA VISTA	NW SW NE, Sec. 21, T20N, R30W	308710.8	4730278.1	41
2	Point	1	BUENA VISTA	NE SW NE, Sec. 21, T20N, R30W	308690.50	4730258.48	41
3	Point						
4	Point						
5	Point						
6	Point						
7	Point						

FID	Shape	AREA	PERIMETER	COUNTY	COUNTY_ID	CO_NUMBER	TO_FIPS	ACRES_SF	ACRES	FIP
0	Polygon	1523795000	193975.5	2	1	30	119	376536.4	376538	1911
1	Polygon	1034539000	130629.6	3	2	72	143	255639.1	255640.2	1914
2	Polygon	1045942000	131290.5	4	3	30	59	258456.8	258457.9	1905
3	Polygon	1042278000	130956.6	5	4	32	63	257551.4	257552.5	1906
4	Polygon	1707055000	172890.3	6	5	3	5	421808.4	421810.2	1900
5	Polygon	2522198000	208208.3	7	6	55	109	623246.1	623246.8	1910
6	Polygon	1785624000	170177.5	8	7	96	191	441284.9	441286.8	1919
7	Polygon	1226171000	140643.2	9	8	45	89	302992.2	302993.5	1908
8	Polygon	1039186000	120966.6	10	9	95	189	256787.9	256789	1918
9	Polygon	1215618000	140088.6	11	10	66	131	300384.5	300385.6	1913
10	Polygon	1040056000	130963	12	11	98	195	257002.9	257004	1919
11	Polygon	1993075000	220581.3	13	12	84	167	492497.5	492499.6	1916
12	Polygon	1484768000	154085.1	14	13	71	141	368892.7	368894.2	1914
13	Polygon	1482958000	153944.1	15	14	21	41	366445.4	366446.9	1904
14	Polygon	1474373000	153531.3	16	15	74	147	364324	364325.5	1914
15	Polygon	1483331000	154119.3	17	16	41	81	366537.6	366539.1	1908
16	Polygon	1487907000	154230.9	18	17	17	33	367668.3	367669.9	1903



Relate

Relate lets you associate data with this layer. The associated data isn't appended into this layer's attribute table like it is in a Join. Instead you can access the related data when you work with this layer's attributes or vice-versa.

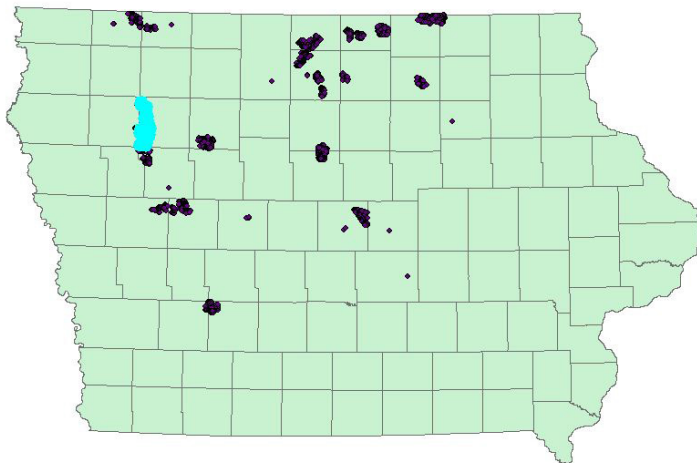
Establishing a relate is particularly useful if there is a 1-to-many or many-to-many association between the layer and the related data.

- Choose the field in this layer that the relate will be based on:
CO_NUMBER
- Choose the table or layer to relate to this layer, or load from disk:
wind_turbines
- Choose the field in the related table or layer to base the relate on:
CO_NUMBER
- Choose a name for the relate:
county wind turbines

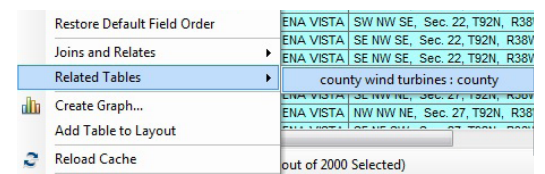
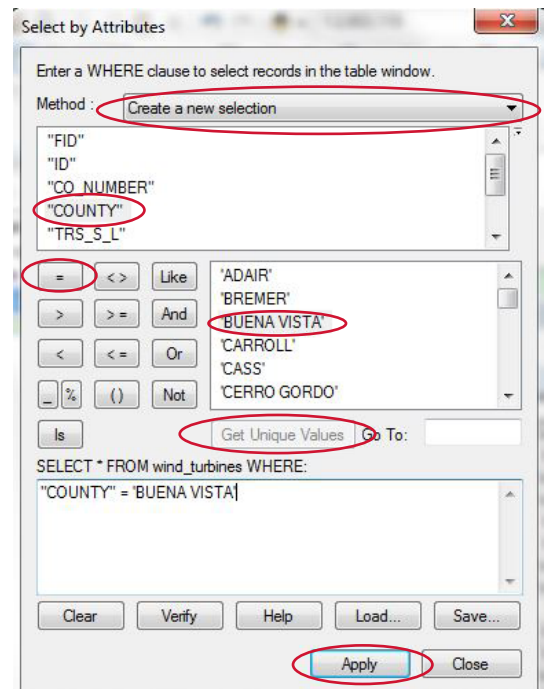
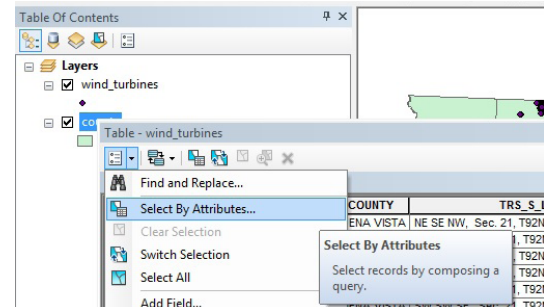
[About relating data](#) OK Cancel

3. Selecting Related Features

- Open the attribute table for both the **wind_turbines** layer and the **county** layer by right-clicking the layer from the **Table of Contents** and selecting **Open Attribute Table**. Resize the windows from each attribute table to get a full view of each.
- Select the **Select By Attributes** icon in the attribute table for the **county** shapefile.
- From the **Method:** drop-down menu, make sure **Create a new selection** is selected.
- Double click on **"COUNTY"** from the box below **Create a new selection**.
- Click the **=** icon.
- Click the **Get Unique Values** icon and double-click **Buena Vista** from the box above and click **Apply**.
- From the **wind_turbines** attribute window, click on the **Table Options** icon > **Related Tables** > **county wind turbines : county**. Features of the **wind_turbines** layer will be selected based upon the county it was related to from the **county** layer.



FID	Shape	ID	CO_NUMBER	COUNTY	TRS_S_L	UTM_X	UTM_Y	AREA	PERIMETER	COUNTY	COUNTY ID	CO_NUMBER	CO_APS	ACRES
1	Point	1	11	BUENA VISTA	NE SE NW, Sec. 21, T29N, R38W	308958.1	4111111.1	152795000	193915.5	2	1	60	119	3762.9
2	Point	2	11	BUENA VISTA	NE SW NE, Sec. 21, T29N, R38W	308716.0	4111111.1	152454000	13206.5	3	2	72	140	2050.6
3	Point	3	11	BUENA VISTA	NE SW NE, Sec. 21, T29N, R38W	308900.20	4111111.1	154042000	13206.5	4	3	30	59	2545.0
4	Point	4	11	BUENA VISTA	SW SW SE, Sec. 21, T29N, R38W	308900.20	4111111.1	154222000	13206.5	5	4	32	63	2575.5
5	Point	5	11	BUENA VISTA	SW SW SE, Sec. 21, T29N, R38W	308900.20	4111111.1	157019500	17286.3	6	5	3	5	4210.0
6	Point	6	11	BUENA VISTA	SW SW SE, Sec. 21, T29N, R38W	308900.20	4111111.1	157222000	20506.3	7	6	60	109	4225.4
7	Point	7	11	BUENA VISTA	SW SW SE, Sec. 21, T29N, R38W	308900.20	4111111.1	176552000	170177.5	8	7	96	181	4413.0
8	Point	8	11	BUENA VISTA	SW SW SE, Sec. 21, T29N, R38W	308900.20	4111111.1	120871000	148643.2	9	8	45	88	3629.6
9	Point	9	11	BUENA VISTA	SW SW SE, Sec. 21, T29N, R38W	308900.20	4111111.1	153910000	17086.8	10	9	96	189	2687.9
10	Point	10	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	308781.07	4111111.1	121061000	140088.8	11	10	60	131	3035.0
11	Point	11	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	308964.4	4111111.1	154040000	13206.5	12	11	96	189	2479.6
12	Point	12	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	310141.2	4111111.1	1590707000	22091.3	13	12	64	187	4824.9
13	Point	13	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	310138.09	4111111.1	144470000	15406.1	14	13	71	141	3665.0
14	Point	14	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	310400.01	4111111.1	142091000	15364.1	15	14	21	41	3844.4
15	Point	15	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	310479.76	4111111.1	142425000	15350.3	16	15	72	140	3643.0
16	Point	16	11	BUENA VISTA	NE SW SW, Sec. 22, T29N, R38W	310528.00	4111111.1	140310000	154119.3	17	16	41	81	3665.2
17	Point	17	11	BUENA VISTA	NE SW NE, Sec. 27, T29N, R38W	310462.02	4111111.1	143792000	15428.9	18	17	13	33	2678.0
18	Point	18	11	BUENA VISTA	NE SW NE, Sec. 27, T29N, R38W	310511.12	4111111.1	139542000	14486.8	19	18	19	37	3255.4



Contact

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